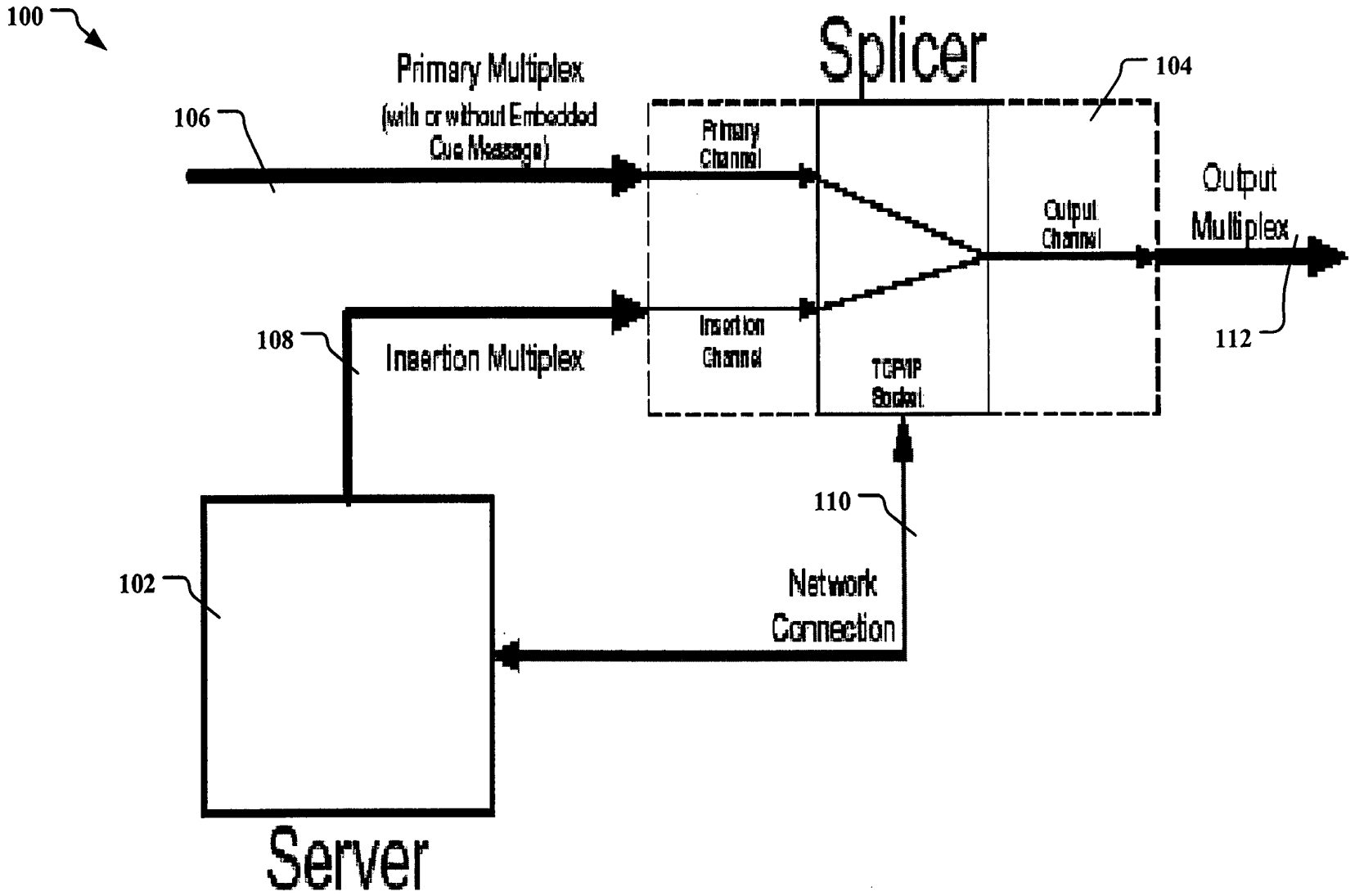

FIG. 1
(PRIOR ART)

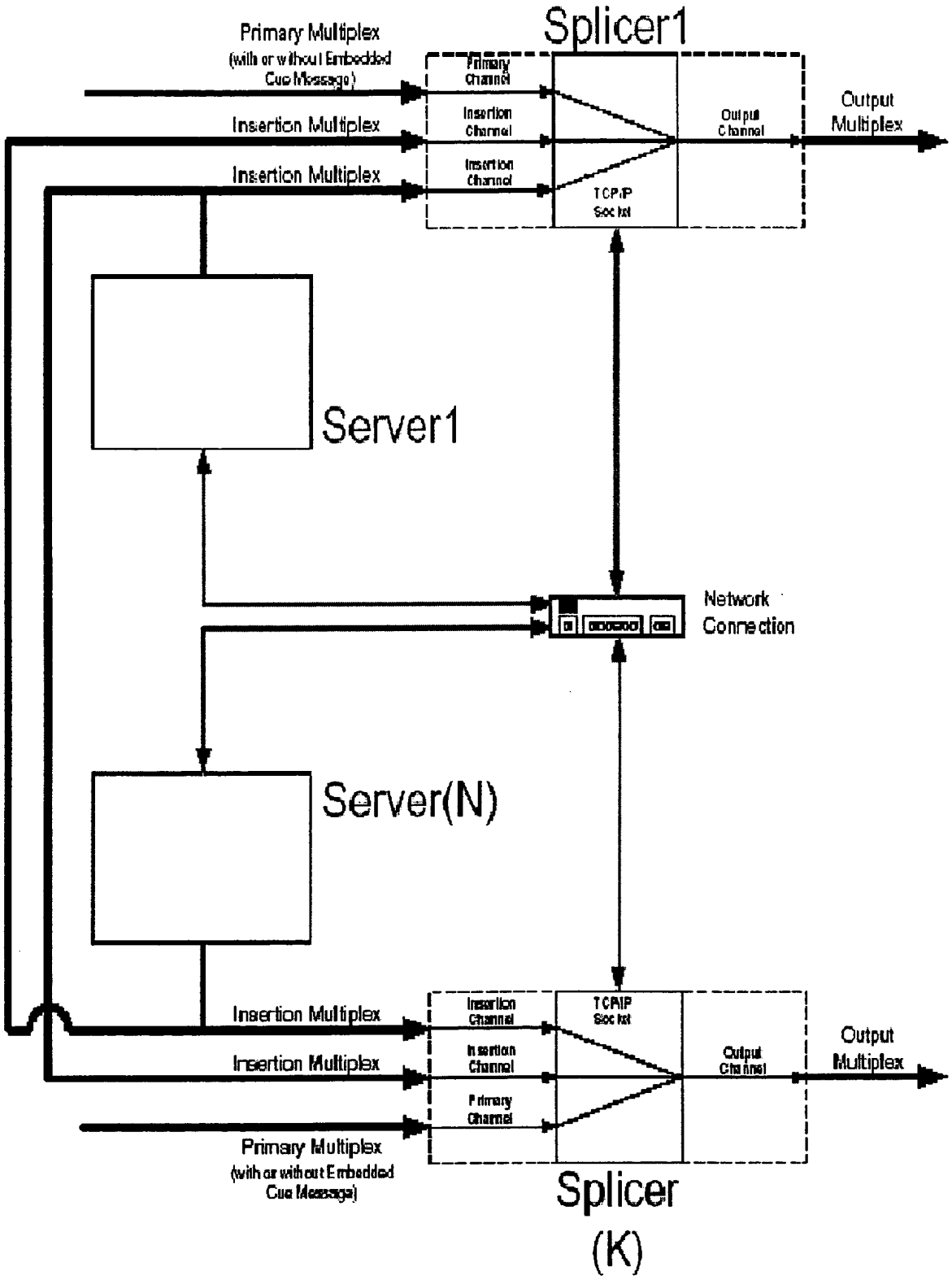

FIG. 2
(PRIOR ART)

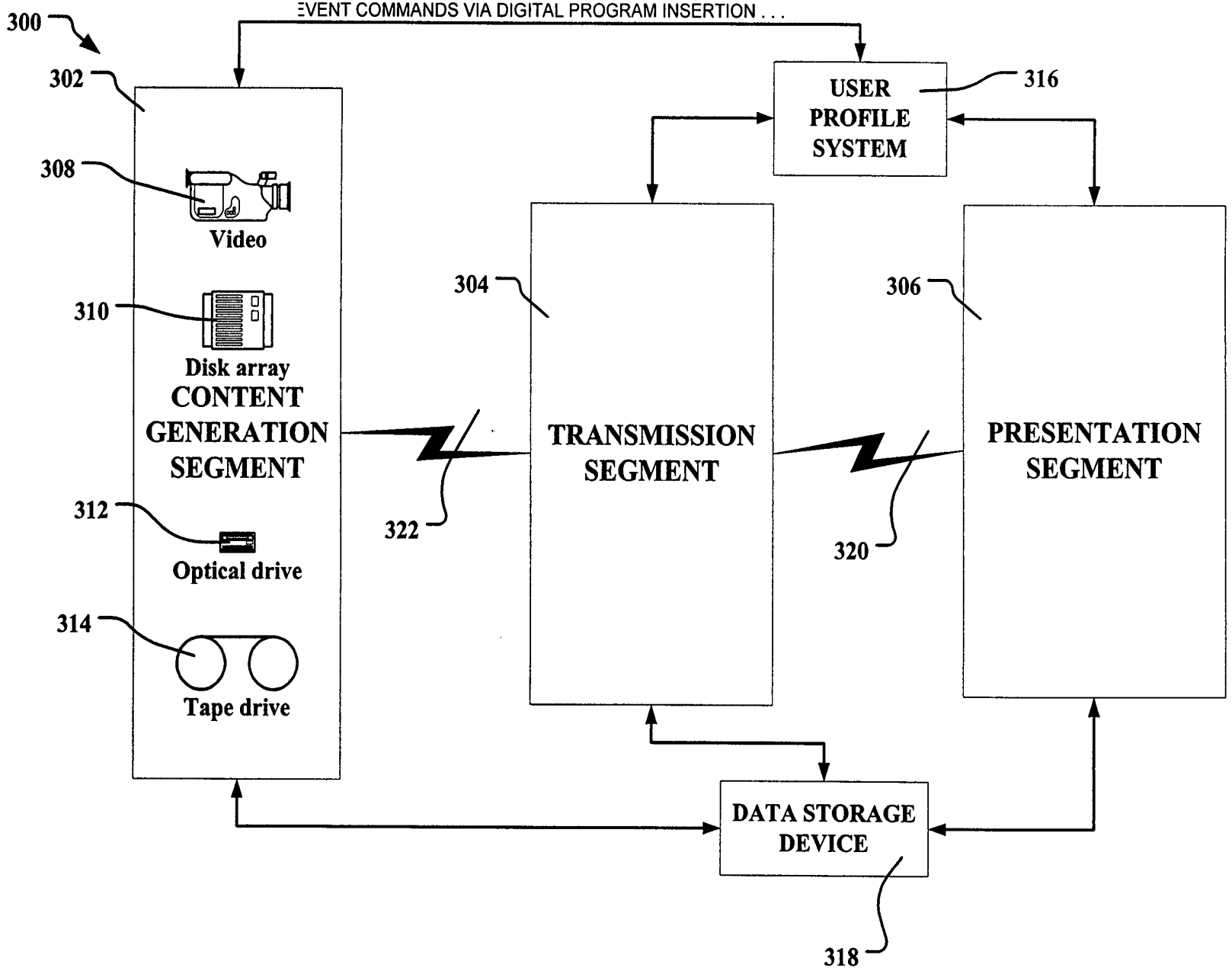
300
302
308
Video
310
Disk array
CONTENT GENERATION SEGMENT
312
Optical drive
314
Tape drive
USER PROFILE SYSTEM
316
304
TRANSMISSION SEGMENT
306
PRESENTATION SEGMENT
322
320
DATA STORAGE DEVICE
318

FIG. 3

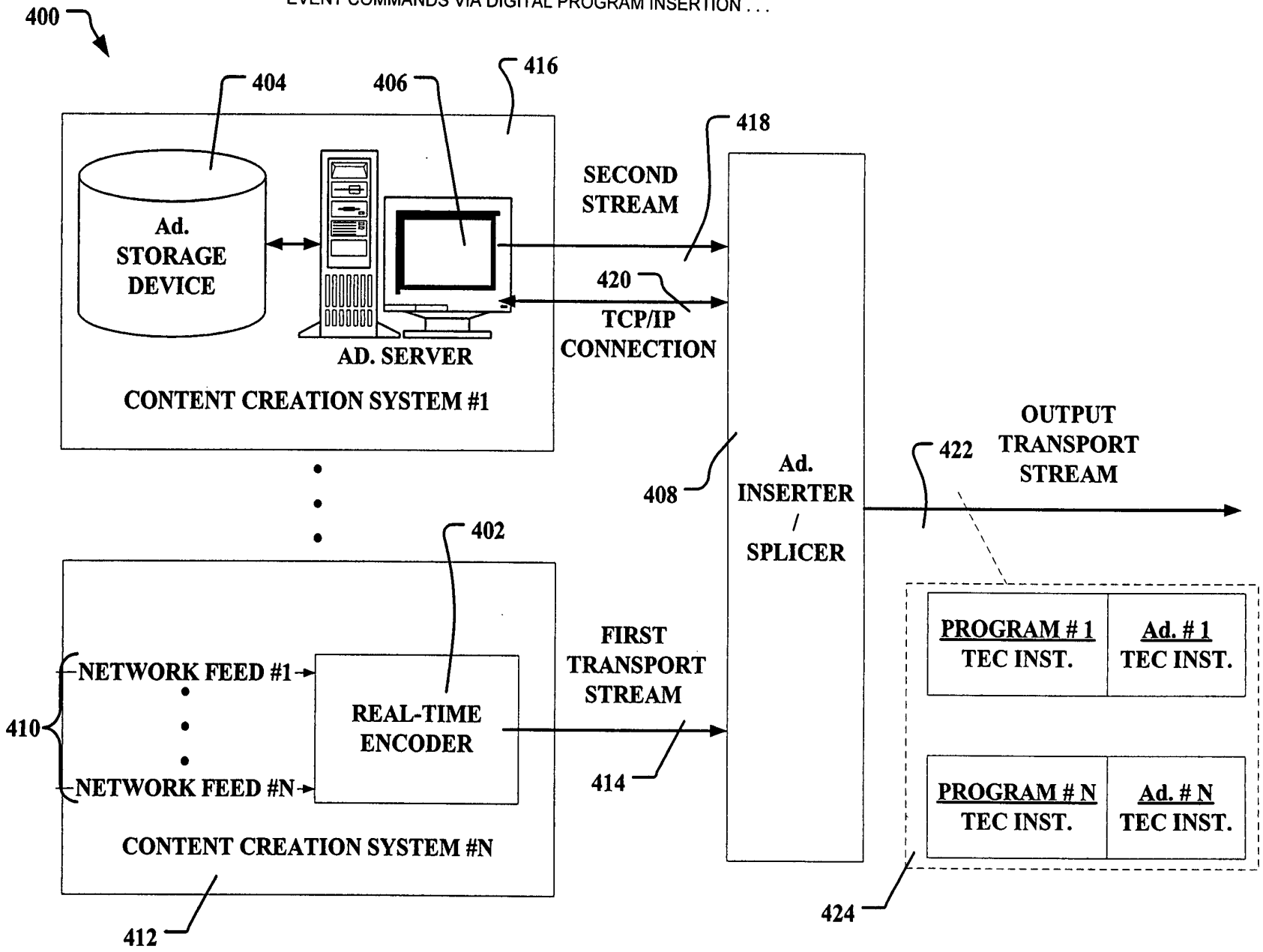
400
404
406
416
418
Ad. STORAGE DEVICE
AD. SERVER
CONTENT CREATION SYSTEM #1
SECOND STREAM
420
TCP/IP CONNECTION
408
Ad. INSERTER / SPLICER
422
OUTPUT TRANSPORT STREAM
402
NETWORK FEED #1
NETWORK FEED #N
410
REAL-TIME ENCODER
FIRST TRANSPORT STREAM
414
CONTENT CREATION SYSTEM #N
412
PROGRAM # 1 TEC INST.
Ad. # 1 TEC INST.
PROGRAM # N TEC INST.
Ad. # N TEC INST.
424

FIG. 4

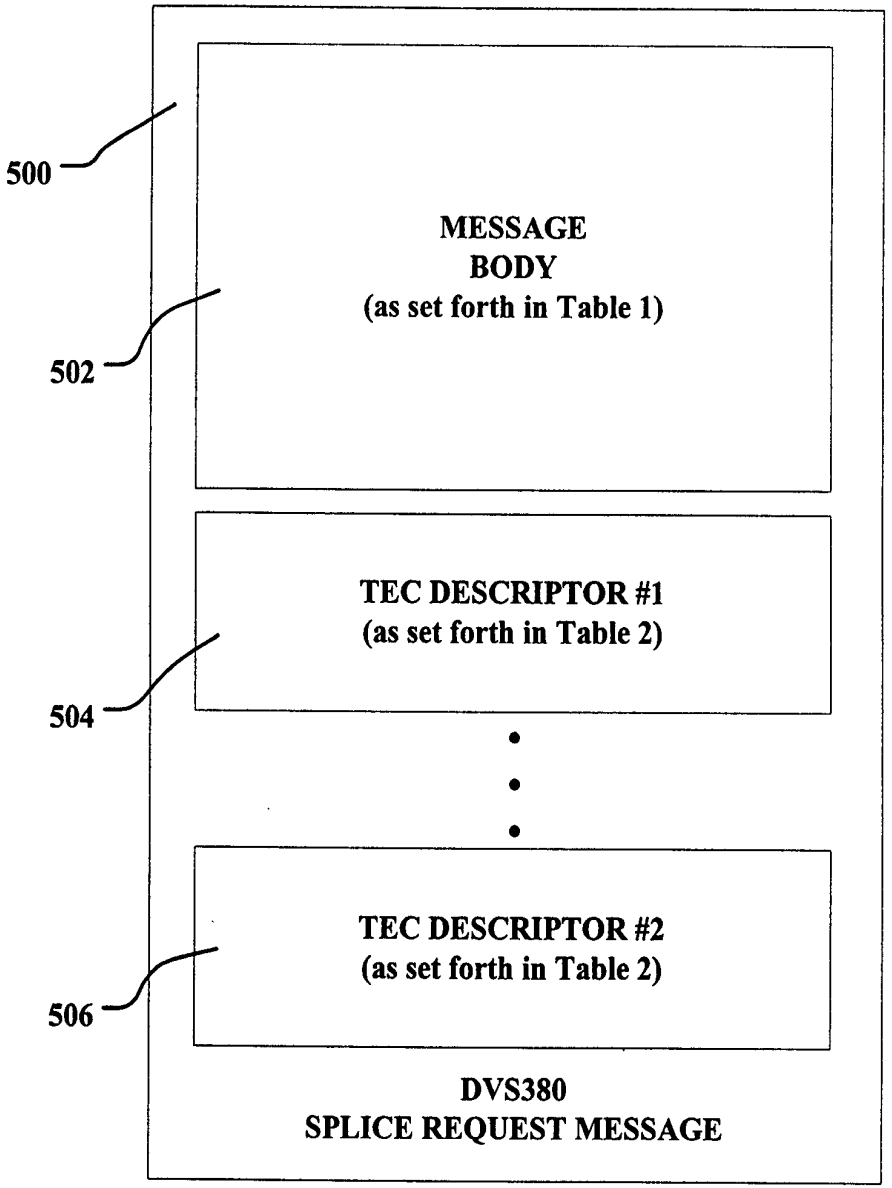
500
502
504
506
MESSAGE
BODY
(as set forth in Table 1)
TEC DESCRIPTOR #1
(as set forth in Table 2)
TEC DESCRIPTOR #2
(as set forth in Table 2)
DVS380
SPLICE REQUEST MESSAGE

FIG. 5

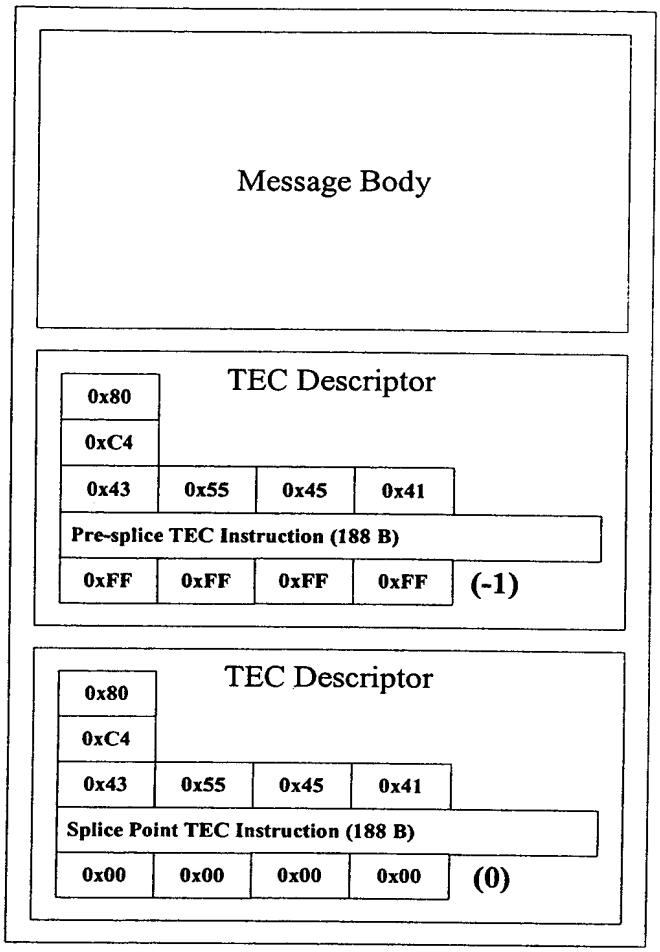
Message Body
TEC Descriptor
0x80
0xC4
0x43
0x55
0x45
0x41
Pre-splice TEC Instruction (188 B)
0xFF
0xFF
0xFF
0xFF
(-1)
TEC Descriptor
0x80
0xC4
0x43
0x55
0x45
0x41
Splice Point TEC Instruction (188 B)
0x00
0x00
0x00
0x00
(0)

FIG. 6

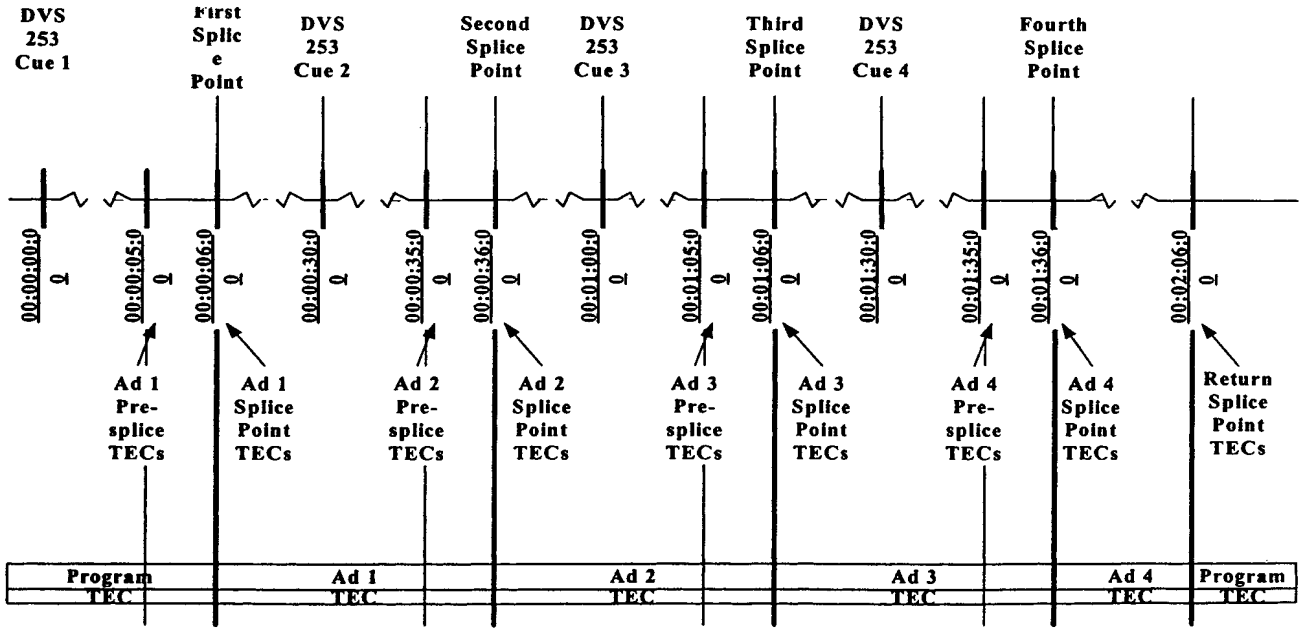
DVS 253 Cue 1
First Splice Point
DVS 253 Cue 2
Second Splice Point
DVS 253 Cue 3
Third Splice Point
DVS 253 Cue 4
Fourth Splice Point
00:00:00:0
00:00:05:0
00:00:06:0
00:00:30:0
00:00:35:0
00:00:36:0
00:01:00:0
00:01:05:0
00:01:06:0
00:01:30:0
00:01:35:0
00:01:36:0
00:02:06:0
Ad 1 Pre-splice TECs
Ad 1 Splice Point TECs
Ad 2 Pre-splice TECs
Ad 2 Splice Point TECs
Ad 3 Pre-splice TECs
Ad 3 Splice Point TECs
Ad 4 Pre-splice TECs
Ad 4 Splice Point TECs
Return Splice Point TECs
Program TEC
Ad 1 TEC
Ad 2 TEC
Ad 3 TEC
Ad 4 TEC
Program TEC

FIG. 7

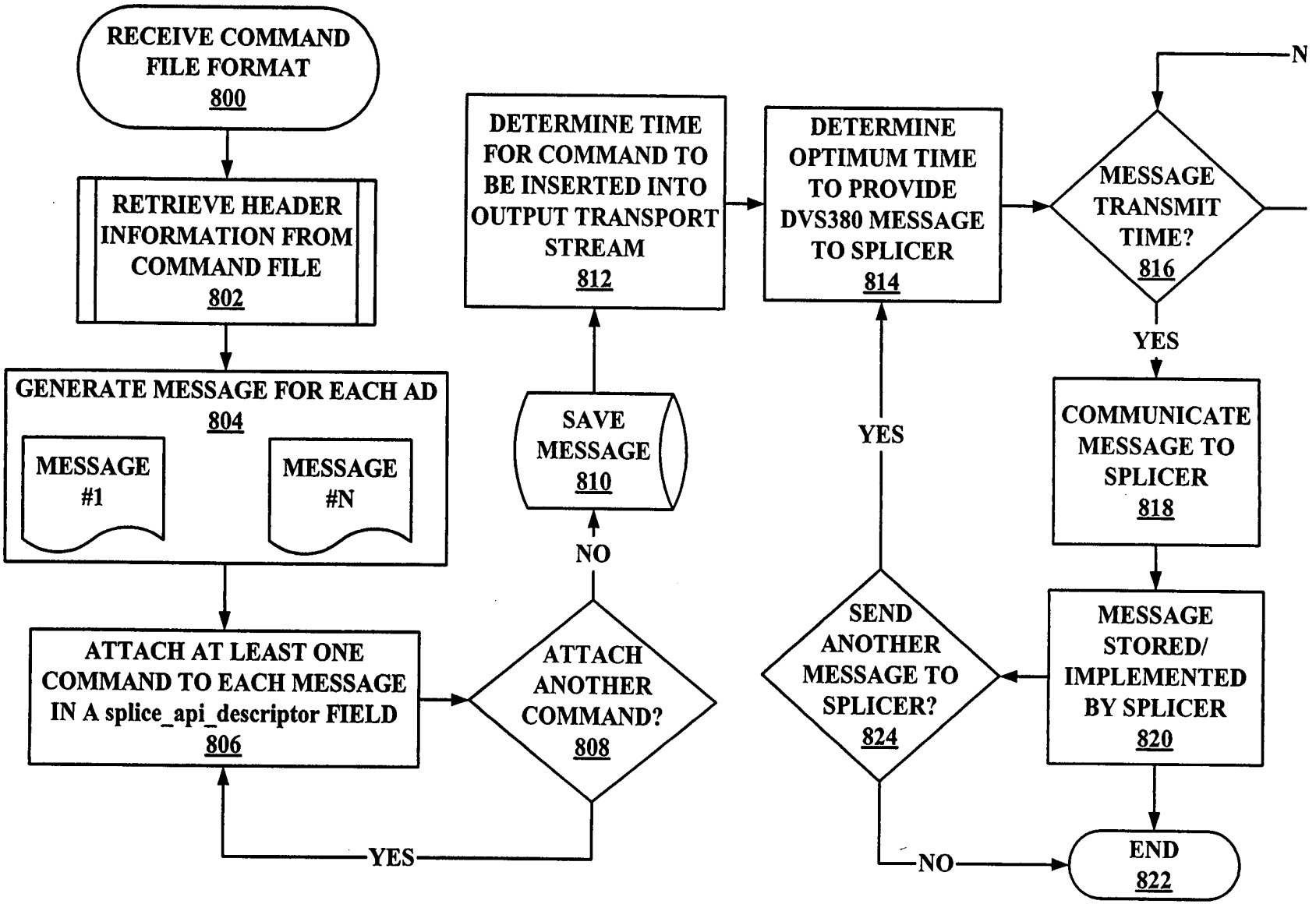
RECEIVE COMMAND FILE FORMAT 800
RETRIEVE HEADER INFORMATION FROM COMMAND FILE 802
GENERATE MESSAGE FOR EACH AD 804
MESSAGE #1
MESSAGE #N
ATTACH AT LEAST ONE COMMAND TO EACH MESSAGE IN A splice_api_descriptor FIELD 806
ATTACH ANOTHER COMMAND? 808
NO
YES
SAVE MESSAGE 810
DETERMINE TIME FOR COMMAND TO BE INSERTED INTO OUTPUT TRANSPORT STREAM 812
DETERMINE OPTIMUM TIME TO PROVIDE DVS380 MESSAGE TO SPLICER 814
MESSAGE TRANSMIT TIME? 816
N
YES
COMMUNICATE MESSAGE TO SPLICER 818
MESSAGE STORED/ IMPLEMENTED BY SPLICER 820
SEND ANOTHER MESSAGE TO SPLICER? 824
YES
NO
END 822

FIG. 8

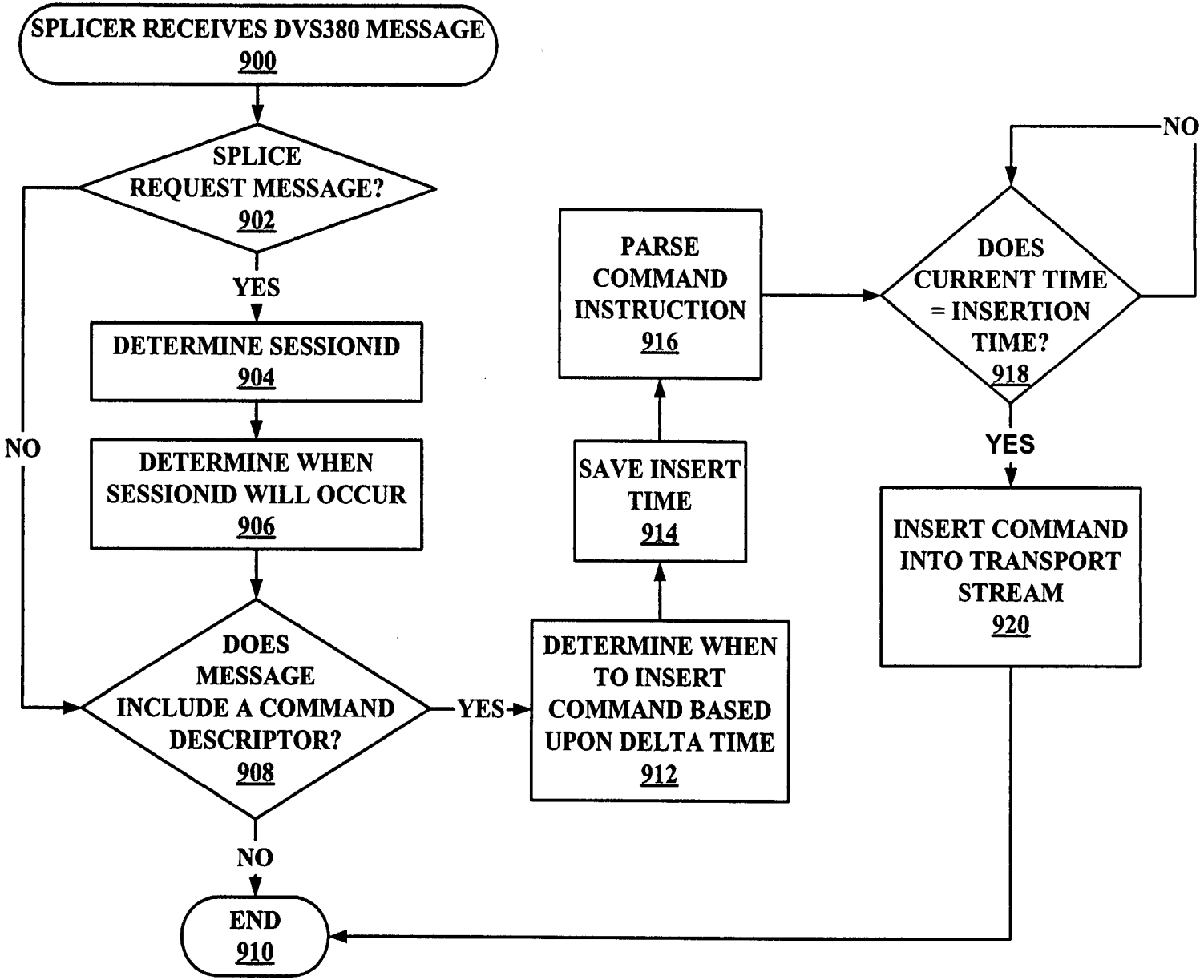
SPLICER RECEIVES DVS380 MESSAGE
900
SPLICE REQUEST MESSAGE?
902
YES
NO
DETERMINE SESSIONID
904
DETERMINE WHEN SESSIONID WILL OCCUR
906
DOES MESSAGE INCLUDE A COMMAND DESCRIPTOR?
908
YES
NO
END
910
DETERMINE WHEN TO INSERT COMMAND BASED UPON DELTA TIME
912
SAVE INSERT TIME
914
PARSE COMMAND INSTRUCTION
916
DOES CURRENT TIME = INSERTION TIME?
918
NO
YES
INSERT COMMAND INTO TRANSPORT STREAM
920

FIG. 9

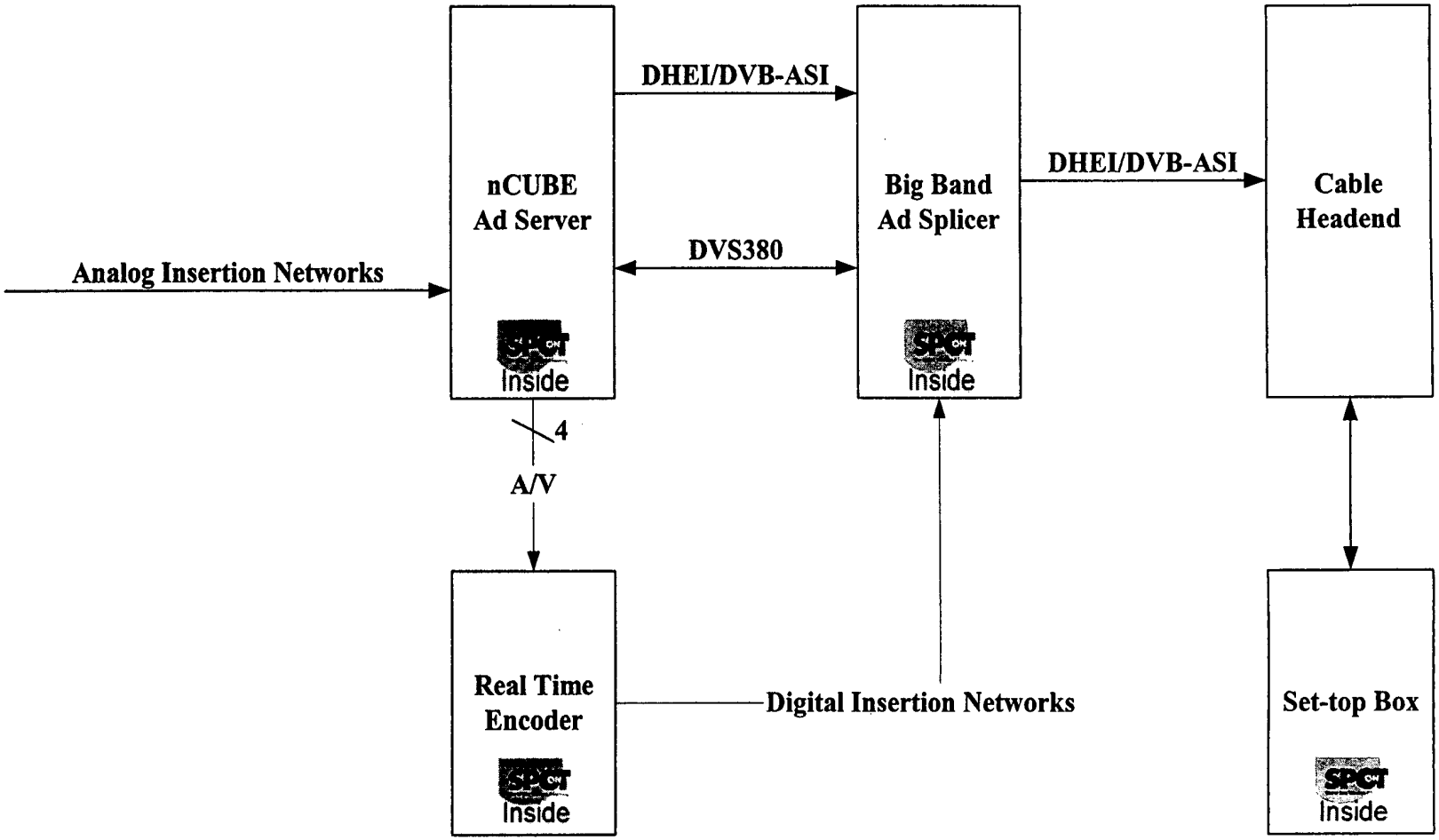
nCUBE
Ad Server
Inside
DHEI/DVB-ASI
DVS380
Big Band
Ad Splicer
Inside
DHEI/DVB-ASI
Cable
Headend
Analog Insertion Networks
4
A/V
Real Time
Encoder
Inside
Digital Insertion Networks
Set-top Box
Inside

FIG. 10